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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,102	03/30/2004	Nobuo Konishi	33082M201	3093
441	7590	10/05/2005	EXAMINER	
SMITH, GAMBRELL & RUSSELL, LLP 1850 M STREET, N.W., SUITE 800 WASHINGTON, DC 20036			ALANKO, ANITA KAREN	
			ART UNIT	PAPER NUMBER
			1765	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/812,102

Applicant(s)

KONISHI ET AL.

Examiner

Anita K. Alanko

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/30/05 election by telephone.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 9-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/30/04;8/20/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-8, drawn to a method, classified in class 216, subclass 92.
- II. Claims 9-17, drawn to an apparatus, classified in class 134, subclass 41+.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus can be used for a different process such as using multiple chemical liquids and no rinse liquids.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Michael Makuch on September 30, 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-8. Affirmation of this election must be made by applicant in replying to this Office action. Claims 9-17 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the

application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 6, the term “entirely” is unclear. Is the film/rinse liquid entirely on the surface (meaning not on a back surface, or only a particular surface but not the complete surface), or is the film/rinse liquid on the complete top surface of the substrate?

Claims 2-8 do not cure the indefiniteness of the of the base claim, and are therefore also rejected.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 7-8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by JP

2001-1284206A.

JP 2001-1284206A discloses a method comprising:

- (i) supplying a chemical liquid (developer) on a rotating substrate to form a film of the chemical liquid on a surface of the substrate W (Fig.1-2);
- (ii) supplying a rinse liquid (rinsing solution) on the rotating substrate to form a film of a mixture of the chemical liquid and the rinse liquid on the surface of the substrate entirely, as broadly interpreted; and
- (iii) removing the mixture from the surface of the substrate by the rinse liquid (since the rinse liquid trails the chemical liquid, the rinse liquid inherently removes the mixture).

Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by JP 4-287922.

JP 4-287922 discloses a method comprising:

- (i) supplying a chemical liquid 4 on a rotating substrate W to form a film of the chemical liquid on a surface of the substrate (process A, see abstract);
- (ii) supplying a rinse liquid (process C) on the rotating substrate to form a film of a mixture of the chemical liquid and the rinse liquid on the surface of the substrate entirely, as broadly interpreted (this is inherent since there is overlap between process A and process C, see lines 17-19), there is also a mixture of the two liquids; and
- (iii) removing the mixture from the surface of the substrate by the rinse liquid (process C).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 4-287922 in view of Taniyama et al (US 6,096,233).

The discussion of JP 4-287922 from above is repeated here.

As to claim 2, JP 4-287922 does not disclose to move the nozzles. Taniyama teaches that it is useful to move the nozzles that supply chemical liquid (col.7, lines 18-19) and water rinse liquid (col.4, lines 51-53) from a periphery towards the center in order to control the treatment through the various radii of the wafer to that desired. It would have been obvious to move the nozzles as cited in the method of JP 4-287922 because Taniyama teaches that it is a useful

technique for controlling the treatment rate to a predetermined rate in order to optimize the final result for circular, spinning substrates.

As to claim 3, since Taniyama discloses to control the rate of movement of the nozzles, the distance between them is also controlled within a predetermined range (which, broadly interpreted may equal the diameter of the wafer).

As to claim 4, it would have been obvious to one with ordinary skill in the art to increase the supply rate as cited in the modified method of JP 4-287922 in order to speed up the rinsing process, which saves time and money.

As to claim 5, Taniyama discloses to stop supplying the chemical liquid when the nozzle reaches the center (col.7, lines 25-32), and then to move the rinse nozzle towards the center (col.7, lines 33-38) and to rinse from the center (since Taniyama does not disclose to stop rinsing before the center is reached). It would have been obvious to one with ordinary skill in the art to increase the rotation speed as cited in the modified method of JP 4-287922 in order to speed up the rinsing process, which saves time and money.

As to claim 6, it would have been obvious to one with ordinary skill in the art to increase the supply rate as cited in the modified method of JP 4-287922 in order to speed up the rinsing process, which saves time and money.

As to claim 7, the method of Taniyama (as discussed above under claim 5) includes discharging the chemical liquid and rinse liquid from above a center.

As to claim 8, JP 4-287922 discloses that there is overlap between the step (i) and (ii) (see abstract).

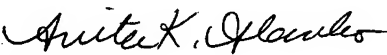
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art shows methods of supplying chemical liquids.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K. Alanko whose telephone number is 571-272-1458. The examiner can normally be reached on Mon-Fri until 2:30 pm (Wed until 11:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Anita K Alanko
Primary Examiner
Art Unit 1765